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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,557	09/12/2003	Kazumasa Ito	Q77499	6398
23373	7590	03/15/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			NATNITHITHADHA, NAVIN	
			ART UNIT	PAPER NUMBER
			3736	

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,557

Applicant(s)

ITO ET AL.

Examiner

Navin Natnithithadha

Art Unit

3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 12 and 13 is/are allowed.
- 6) ☒ Claim(s) 9, 10 and 14 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02232004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Many words in the Specification are missing letters. It appears the missing letters are due to an error in photocopying of the Specification. Please see the following: page 2, line 1; page 3, line 1; page 8, line 3; page 10, line 2; page 17, line 2; page 21, line 2; page 22, line 9; page 26, lines 1-2; page 27, line 1; and page 28, line 1. Appropriate correction is required. The Examiner suggests submitting a new Specification and new Claims to correct these errors.

Claim Objections

2. Claims 12-14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The applicant is attempting to claim an apparatus, i.e. a pulse photometer, in claims 12-14, however, there are no elements to provide structure to the apparatus. It is not clear how the pulse photometer or elements of the pulse photometer would be used in executing the signal processing method. See MPEP 608.01(n), page 600-80.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 9, 10, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Baker, Jr. et al, US 6,083,172 A.

In regards to claims 9 and 14, Baker teaches a method of processing data from a pulse oximeter (pulse photometer) for reducing the effects of noise, comprising: passing light through blood perfused tissue with infrared and red light (see col. 1, lines 23-32 and col. 5, lines 61-65); data acquisition of pulse oximetry data and pre-processing the data (see fig. 1, steps 10, 12, and 14, and col. 5, lines 47-54); and whitening the two signals to eliminate the noise from the signal (see fig. 1, step 20 and col. 6, lines 36-55). As to claim 10, Baker teaches "independent component analysis" as "...taking the derivative of the normalized data, thereby emphasizing the higher harmonics of the pleth [signal] so that its energy is more evenly distributed between them. Data points resulting in an impossible saturation calculation are rejected (step 22)..."

Allowable Subject Matter

4. Claims 1-8, 12, and 13 are allowed.
5. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

As to claims 1, 2, and 12, the prior art of record does not teach a method of processing a pulse photometer, comprising: computing a light absorbance ratio obtained from the first electric signal (infrared) and the second electric signal (red), for each one of frequency ranges dividing an observed frequency band; and determining that noise is not mixed into the observed pulse wave data in a case where a substantial match exists among light absorbance ratios computed for the respective frequency ranges. Support for the allowable subject matter is on page 20, lines 4-17 and page 20, line 24 to page 21, line 8.

As to claims 3-8 and 13, the prior art of record does not teach a method of processing a pulse photometer, comprising: whitening the first electric signal (infrared) and the second electric signal (red) by an affine transformation using a known light absorbance ratio, in order to separate a pulse signal component and a noise component which are contained in the observed pulse data. Support for the allowable subject matter is on page 22, line 6-24.


As to claim 11, the prior art of record does not teach a method of processing a pulse photometer, comprising: a step of obtaining a signal-to-noise ratio of the observed pulse wave data by performing a frequency analysis with respect to the signal component and the noise component *at each one of the frequency ranges*. Support for the allowable subject matter is on page 21, line 9-22.


Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Navin Natnithithadha whose telephone number is (571) 272-4732. The examiner can normally be reached on Monday-Friday, 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Navin Natnithithadha
Patent Examiner
GAU 3736
March 15, 2005


Robert Mason
Patent Examiner
GAU 3736